

2nd World Congress on Petrochemistry and Chemical Engineering

October 27-29, 2014 Embassy Suites Las Vegas, USA

Potential of bioenergy in ethanol distilleries in Brazil

Antonio Carlos Duarte Coelho
Federal University of Pernambuco, Brazil

Improvements in the units of electricity power in operation and the search for alternatives for their production are consequences of the greenhouse effect and the general growth of world demand the consumption of such energy! In Brazil and in most countries, biomass is considered one of the main alternatives for diversification of energy sources and reducing the use of fossil fuels. The biomass residues of crop production, mainly from sugar cane, grain and raw materials of pulp industries can generate gaseous, liquid and solid fuels. In many tropical countries, the source of biomass that has emerged is from sugarcane! In Brazil, currently agricultural waste is used to generate heat and electricity in cogeneration systems in sugar and ethanol mills. Many plants have a system of energy self-sufficiency, and some of them produce surplus electricity to be sold to distributors. However, in this country, most of the plants, around 450 units using 600 million tons of sugarcane as feedstock, have medium pressure boilers (22 bar, 300°C). The generation of electricity by a unit is directly proportional to the technology employed, due to unit cost (U.S. \$ / kW installed) that is influenced by the scale effect. Boilers working at 40 to 100 bar increases significantly the energy efficiency. The exchange of single-stage turbines for multiple-stage turbines has positive effects, too. So, it is evident that the potential of producing electricity by biomass is enormous in all countries that produce sugar and ethanol from sugarcane.

Biography

Antonio Carlos Duarte Coelho is Professor and Researcher at Federal University of Pernambuco (UFPE) -Brazil; Doctor-Engineer from Ecole Nationale des Industries Agricoles et Alimentaires and Post- PhD from Ecole Centrale Paris. He is former of Ambassadorial Scholar of Japanese International Cooperation Agency, former of Chief of PTO-PE and Business Manager DINE-UFPE. He is the Coordinator of the Research Group of Chemical Processes and clean technologies. He has experience in mass and energy balance, renewable energy, waste reduction, Clean Technologies and conducts research in the area of biofuels, green chemistry and life cycle.

acduartecoelho@hotmail.com